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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,532	08/25/2003	Stephan Karl Barsun	200209610-1	4464

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EXAMINER

PAPE, ZACHARY

ART UNIT	PAPER NUMBER
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2835

DATE MAILED: 06/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/648,532

Applicant(s)

BARSUN ET AL.

Examiner

Zachary M. Pape

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 8-11, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Azar (US 6,301,779). With respect to claim 1, Azar teaches the use of a heat dissipation device comprising: a base (700); and a plurality of fins (410, 420, 430, 440) connected to said base and extending out from said base at a non-orthogonal angle to said base.

With respect to claims 2 and 9, Azar further teaches that the non-orthogonal angle is substantially forty-five degrees (As illustrated by alpha in Fig 3).

With respect to claim 3, Azar further teaches that the heat dissipation device is configured to be thermally coupled to an electronic component (710, Via 700) for dissipating heat generated by said electronic component (Base 700 must act as a thermal conductor to effectively transfer the heat from the heat generating unit (710) to the fins (400)).

With respect to claims 4, and 13, Azar further teaches that the electronic component (710) is an integrated circuit (Column 7, Lines 61-62; a microprocessor is inherently an integrated circuit).

With respect to claims 5, 6, 10, and 11, Azar further teaches that the heat dissipation apparatus (400) is comprised of aluminum or copper (Column 2, Lines 15-16).

With respect to claim 8, Azar further teaches the use of an electronic device comprising: a computer component (710); and a tilted fin heat sink (400) thermally coupled to said computer component (Via 700) for dissipating heat generated by said computer component, said tilted fin heat sink comprising a base (700) and a plurality of fins (410, 420, 430, 440), wherein said plurality of fins extend out from said base of said heat sink at a non-orthogonal angle to said base (As illustrated in Fig 7), said tilted fin heat sink for dissipating heat generated by said computer component.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Azar in view of Fujisaki et al. (US 5,763,950). With respect to claims 7 and 12, Azar teaches all the claim limitations of claim 1, but fails to teach the use of a fan. Fujisaki et al. teaches the use of a fan (35) arranged perpendicular to a plurality of angled fins (As illustrated in Fig 5) for moving the air across the fins (As illustrated in Fig 6). It would have been obvious to one of ordinary skill in the art at the time the invention was made

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to combine the fan cooling features of Fujisaki et al. with the slanted fin cooling features of Azar to produce a more efficient means of cooling the angled fins (Fujisaki et al, Column 2, Lines 28-32).

Claims 14 –17, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wiley (US 6,704,199) in view of Azar (US 6,301,779). With respect to claim 14, Wiley teaches the use of a circuit board comprising: a card connector for connecting to a card such that said card extends out from said card connector at a first non-orthogonal angle to said card connector (See present office action Fig 1 below), an electronic component (beneath mounting plate 40), and a fin heat sink (30) mounted to said electronic component. Wiley further teaches that the card connector and said electronic component are proximately placed such that said card and said fins do not come in contact (As illustrated in Fig 4). Wiley fails to teach that the fins of the heat sink extend out from a base of said heat sink at a second non-orthogonal angle to said base.

Azar teaches the use of a tilted fin heat sink (400) mounted to the electronic component. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the tilted heat sink (fins) of Azar with the card connectors and other components of Wiley to provide a means of providing more efficient cooling to the electronic component of Wiley. Tilting the fins of Wiley as taught by Azar would allow for more surface area of the fins to be exposed to the air which in turn would increase the cooling to the electronic component.

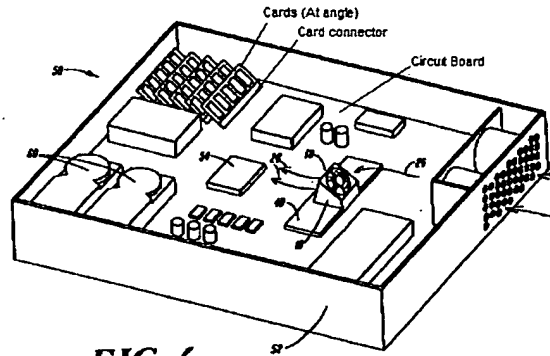


FIG. 4

Fig 1

With respect to claims 15 and 17, as illustrated in both the Wiley and Azar references, the non-orthogonal angle of both the cards and the fins are substantially equal (If the fins of Azar were combined with Wiley as suggested they could be oriented in the same direction such that the angles are substantially equal (I.E. Parallel) to provide a proper angle for which the air can easily flow between the fins for greater cooling).

With respect to claim 16, the non-orthogonal angles of both the Wiley and Azar references are both substantially forty-five degrees (As illustrated in Wiley Fig 4, Azar Fig 3).

With respect to claim 19, Wiley further teaches that the electronic component is a microprocessor (Column 3, Lines 64-66).

With respect to claim 20, Azar further teaches that an integrated circuit (Column 7, Lines 61-62).

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wiley in view of Azar and further in view of Schulz (US 6674644). Wiley in view of Azar teaches the claim limitations as taught in claim 14, but fails to specifically teach that the card is a DIMM. Schulz teaches the conventionality of using DIMM memory cards as part of a computer system. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the DIMM memory of Schulz with the memory card connector and circuit board of Wiley to provide a superior type of memory for the computer system of Wiley. DIMM memory enhances the system of Wiley by providing memory on both sides of the memory card thereby allowing twice as much memory to be present on just one card (By comparison to SIMM memory, for example). Providing twice as much memory on one card further reduces the need for more cards for the same amount of memory.

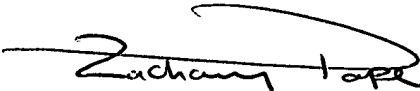
Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zachary M. Pape whose telephone number is 571-272-2201. The examiner can normally be reached on Mon. - Thur. & every other Fri. (8:00am - 5:00pm).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn Feild can be reached at 571-272-2092. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



ZMP



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